CLAIMS

What is claimed is:

1.   A speech recognition method comprising:

inputting speech uttered by a user;

recognizing the input speech and creating a list of a predetermined number of alternative words to be recognized in an order of similarity; and

determining one of the alternative words that a cursor currently indicates as a final, recognized word if a user selection has not been changed within a predetermined standby time, and rearranging an order of the list of the predetermined number of alternative words according to the user selection.

2.   The speech recognition method of claim 1, further comprising:

adjusting the predetermined standby time if the user selection from the list of the alternative words has been changed within the standby time.

3.   The speech recognition method of claim 1, further comprising:

determining another alternative word from the list of the predetermined number of alternative words that is selected by the user as the final, recognized word, if the user's selection is changed within the standby time.

4.   The speech recognition method of claim 1, wherein the determination further comprises:

updating erroneous word patterns using the one of the alternative words and the final, recognized word resulting from the recognition of the speech; and

adjusting the order of the list of the predetermined number of alternative words using the erroneous word patterns.

5.   The speech recognition method of claim 4, wherein the updating of erroneous word patterns comprises:

calculating a difference value in at least one utterance feature if a predetermined erroneous word pattern database stores the one alternative word and the final, recognized word resulting from the recognition of the speech;

comparing the difference value with a first threshold; and

calculating an average value of the utterance feature including that of currently input speech to update an utterance propensity and increasing a value of a history of a corresponding erroneous word pattern by 1 to update the history, if the difference value is smaller than the first threshold.

6.   The speech recognition method of claim 4, wherein the adjustment of the predetermined order comprises:

calculating a difference value in utterance features if a predetermined erroneous word pattern database stores at least one of a pair of the one alternative words and a second alternative word and a pair of the one alternative word and a third alternative word derived from the recognition of the speech;

comparing the difference value with a second threshold in each pair; and

modifying a score of a corresponding alternative word if the difference value is smaller than the second threshold.

7.   The speech recognition method of claim 6, wherein the modified recognition score is calculated by adding a value resulting from multiplication of an original score by a history value of the corresponding alternative word by a predetermined weight.

8.   The speech recognition method of claim 1, further comprising adjusting the standby time according to user dexterity.

9.   The speech recognition method of claim 8, wherein the adjusting of the standby time according to the user dexterity comprises:

calculating a difference value in a selection time by subtracting a determining time for the final, recognized word from a predetermined selection time stored in a dexterity database;

comparing the difference value in the selection time with a third threshold;

modifying the selection time if the difference value in the selection time is greater than the third threshold;

comparing the difference value in the selection time with a predetermined spare time if the difference value in the selection time is less than or equal to the third threshold;

modifying the selection time if the difference value in the selection time is less than the spare time; and

calculating a standby time by adding a predetermined extra time to the modified selection time.

10. The speech recognition method of claim 9, wherein in the modification of the selection time if the difference value in the selection time is greater than the third threshold, the selection time is modified by subtracting a value resulting from multiplication of the difference value in the selection time by a predetermined weight from the selection time stored in the dexterity database.

11. The speech recognition method of claim 9, wherein in the modification of the selection time if the difference value in the selection time is less than the spare time, the selection time is modified by adding a predetermined extra time to the selection time stored in the dexterity database.

12. The speech recognition method of claim 1, wherein the standby time is equally assigned to all of the alternative words on the list of alternative words.

13. The speech recognition method of claim 1, wherein the standby time is assigned differentially to each of the alternative words on the list of alternative words according to the predetermined order of listing the alternative words.

14. A computer-readable recording medium comprising:
a first program that recognizes speech uttered by a user and displays a list of alternative words derived from the recognition of the speech in a predetermined order; and
a second program that determines whether a user selection from the list of alternative words has been changed within a predetermined standby time and determines an alternative word on the list of alternative words that a cursor currently indicates, as the final, recognized word, if the user selection has not been changed.

15. The computer-readable recording medium of claim 14, wherein the second program further comprises:

adjusting the standby time if the user selection has been changed within the predetermined standby time;

determining whether the user selection has been changed within the adjusted standby time; and

determining the alternative word on the list of alternative words selected by the user as the final, recognized word in response to determining that the user selection has not been changed within the adjusted standby time.

16.   The computer-readable recording medium of claim 14, wherein the second program further comprises:

determining another alternative word on the list of alternative words selected by the user as the final, recognized word if it is determined that the user selection has been changed within the predetermined standby time.

17.   A speech recognition apparatus comprising:

a speech input unit that inputs speech uttered by a user;

a speech recognizer that recognizes the speech input from the speech input unit and creates a predetermined number of alternative words to be recognized in an order of similarity; and

a post-processor that determines one of the alternative words that a cursor currently indicates as a final, recognized word, if a user selection from a list of the alternative words has not been changed within a predetermined standby time, and rearranging an order of the list of the alternative words according to the user selection.

18.   The speech recognition apparatus of claim 17, wherein the post-processor comprises:

a window generator that generates a window for a graphic user interface comprising the list of alternative words;

a standby time setter that sets a standby time from when the window is displayed to when the alternative word on the list of the alternative words currently indicated by the cursor is determined as the final, recognized word; and

a final, recognized word determiner that determines the one of the alternative words from the list of the alternative words that is currently indicated by the cursor as the final, recognized word if the user's selection from the list of the alternative words has not been changed within the predetermined standby time, adjusts the predetermined standby time if the user's selection from the list of the alternative words has been changed within the predetermined standby time, and determines the one of the alternative words on the list of the alternative words selected by the user as the final, recognized word if the user's selection has not been changed within the adjusted standby time.

19.   The speech recognition apparatus of claim 17, wherein the post-processor comprises:

a window generator that generates a window for a graphic user interface comprising a list of alternative words that arranges the predetermined number of alternative words in a predetermined order;

a standby time setter that sets a standby time from when the window is displayed to when one of the alternative words on the list of alternative words currently indicated by the cursor is determined as a final, recognized word; and

a final, recognized word determiner that determines the one of the alternative words on the list of alternative words currently indicated by the cursor as the final, recognized word if a user selection from the list of alternative words has not been changed within the standby time and determines another alternative word on the list of alternative words selected by the user as the final, recognized word if the user's selection from the list of alternative words has been changed.

20.   The speech recognition apparatus of claim 18, wherein the post-processor further comprises:

an erroneous word pattern database that stores information of a recognized word determined as the one alternative word by the speech recognizer, the final, recognized word provided by the final, recognized word determiner, at least one user utterance feature, a utterance propensity, and a history; and

an erroneous word pattern manager that receives recognition results and scores from the speech recognizer, adjusts a score of a recognized word corresponding to an erroneous word pattern, and informs the window generator of the adjusted score so as to change the order of listing the alternative words.

21. The speech recognition apparatus of claim 18, wherein the post-processor further comprises:

a dexterity database that stores a selection time on the user dexterity; and

a dexterity manager that adjusts the standby time to a value obtained by adding a predetermined spare time to the selection time stored in the dexterity database and informs the standby time setter of the adjusted standby time.

22. The speech recognition apparatus of claim 18, wherein the post-processor further comprises:

a dexterity database that stores a selection time on the user dexterity; and

a dexterity manager that adjusts the standby time to a value obtained by adding a predetermined spare time to the selection time stored in the dexterity database and informs the standby time setter of the adjusted standby time.

23. The speech recognition apparatus of claim 18, wherein the standby time is determined depending on the dexterity of the user.

24. The speech recognition apparatus of claim 18, wherein the adjusted standby time is equally assigned to all of the alternative words on the list of alternative words.

25. The speech recognition apparatus of claim 18, wherein the adjusted standby time is assigned differentially to each of the alternative words on the list of alternative words according to an order of listing of the alternative words on the list of the alternative words.

26. A speech recognition method comprising:

displaying a list of alternative words, including a first alternative word, resulting from speech recognition;

determining whether an initial standby time has elapsed; and

determining the first alternative word as the final, recognized word if a user has not selected another alternative word from the list of alternative words after the predetermined standby time has elapsed, wherein the list of alternative words is continuously updated and arranged in a predetermined order by computing a number of times the first alternative word and the final recognized word match.

27.   The speech recognition method of claim 26, wherein the updating of the list of alternative words comprises:

calculating a difference value in at least one utterance feature if a predetermined erroneous word pattern database stores a pair of the first alternative word and the final, recognized word resulting from the recognition of the speech;

comparing the difference value with a first threshold; and

calculating an average value of the utterance feature including that of currently input speech to update an utterance propensity and increasing a value of a history of a corresponding erroneous word pattern by 1 to update the history, if the difference value is smaller than the first threshold.

28.   The speech recognition method of claim 26, wherein the adjustment of the predetermined order comprises:

calculating a difference value in utterance features if a predetermined erroneous word pattern database stores at least one of a pair of first and second alternative words and a pair of first and third alternative words derived from the recognition of the speech;

comparing the difference value with a second threshold in each pair; and

modifying a score of a corresponding alternative word if the difference value is smaller than the second threshold.

29.   The speech recognition method of claim 28, wherein the modified recognition score is calculated by adding a value resulting from multiplication of an original score by a history value of the corresponding alternative word by a predetermined weight.